Chapter 2. How have patterns of HIV infection changed over time?

To describe how patterns of HIV infection have changed over time, Chapter Two presents a profile of HIV diagnoses (among both HIV and AIDS cases) before 1999 and from 1999-2001. Data are aggregated prior to 1999 to provide a baseline for comparison to the years since HIV became a reportable condition in Massachusetts, 1999-2001.

On January 1, 1999 the Massachusetts Department of Public Health (MDPH) HIV/AIDS Surveillance Program (HASP) started requiring clinical providers to submit case report forms with demographic and risk information about individuals diagnosed with HIV, as they had been doing for AIDS since 1981. All previous and existing cases of HIV through 1998 also were to be reported by the end of 2000. These cases are labeled "pre-1999" in the following analyses. New as well as previously diagnosed HIV infections continue to be reported. When comparing pre-1999 HIV diagnoses to HIV diagnoses from 1999-2001, one should factor in the differences in HIV reporting requirements for these two time periods. Since HIV diagnoses were not reported at the time of diagnosis prior to 1999 and clinical providers were given a relatively short time frame within which to report all prevalent HIV cases, the pre-1999 data are considered less complete than data reported after 1999. Additionally, pre-1999 HIV diagnoses do not include people who were diagnosed with HIV and died before 1999 and before being reported with AIDS, nor does it include individuals who were no longer receiving health care in Massachusetts at the point when HIV reporting became mandatory.

While trends in HIV diagnosis are our best indicator for how HIV infection has changed over time, HIV surveillance reflects the incidence of positive tests among people who are in care and not the actual incidence of new infections. Like AIDS diagnoses, HIV diagnoses are not a direct measure of incidence. People may be infected with the virus for many years prior to being tested and seeking care, at which point the case is reported to HASP. Furthermore, as with early data for AIDS cases, the data from the first few years of a new reporting system can be unstable, and caution should be used in their interpretation. During the time a data reporting system is in its infancy, there is a greater likelihood that fluctuations in data are attributable to reporting patterns and clinician education efforts rather than actual changes in disease incidence.

Additionally, one must consider the effects of reporting lag when reviewing the preliminary 2001 HIV diagnoses. Although Massachusetts law requires providers to submit HIV case reports in a timely fashion, many 2001 HIV diagnoses will be reported to the surveillance program after the release of this Epidemiologic Profile. The HASP estimates that 25% of 1999 and 2000 HIV diagnoses were reported more than 6 months after the earliest known positive HIV test date. This suggests that the 2001 HIV data presented in this report may represent a substantial undercount.

Section 1. Profile of People Diagnosed with HIV Infection before 1999, in 1999, 2000, and 2001

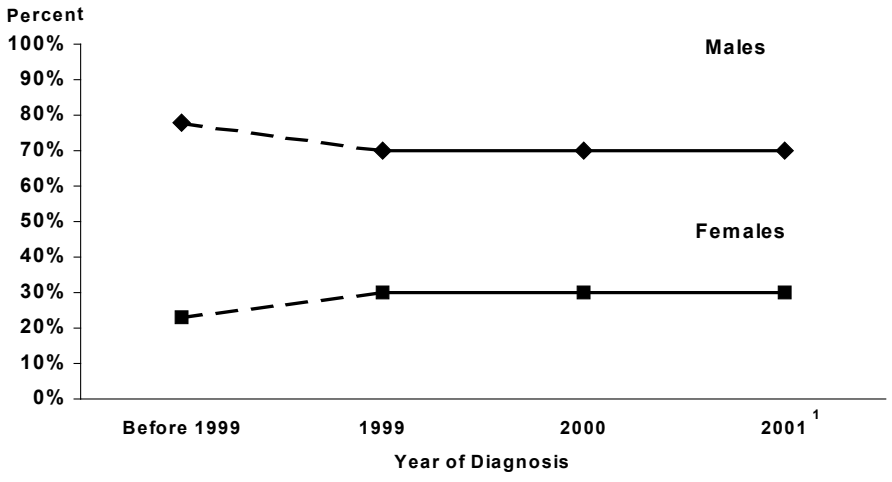
Table 2.1 People Diagnosed with HIV Infection by Gender and Year of Diagnosis: MA, Before 1999, 1999 - 2001

	Male		Female		
	N	%	N	%	Total
< 1999	15,475	78%	4,502	23%	**19,977**
1999	888	70%	389	30%	**1,277**
2000	743	70%	316	30%	**1,059**
2001[1]	*592*[1]	*70%*[1]	*256*[1]	*30%*[1]	***848***[1]

1 2001 HIV data are preliminary
Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 7/1/02

- Of all people diagnosed with HIV/AIDS and reported in Massachusetts, 19,977 were diagnosed with HIV infection before 1999, 1,277 were diagnosed with HIV infection in 1999, 1,059 in 2000, and 848 in 2001. (Note: 2001 data are still considered preliminary)
- From 1999 – 2001, the distribution of people diagnosed with HIV infection across gender has remained steady at 70% male and 30% female. (See Figure 2.1)

Figure 2.1 Percentage Distribution of People Diagnosed with HIV Infection by Gender and Year of Diagnosis: MA, 1999-*2001*[1]



Note: a dashed line is used to distinguish between pre-1999 data (which is an aggregate of multiple years) and annual data for subsequent years. 1 2001 HIV data are preliminary; Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/02

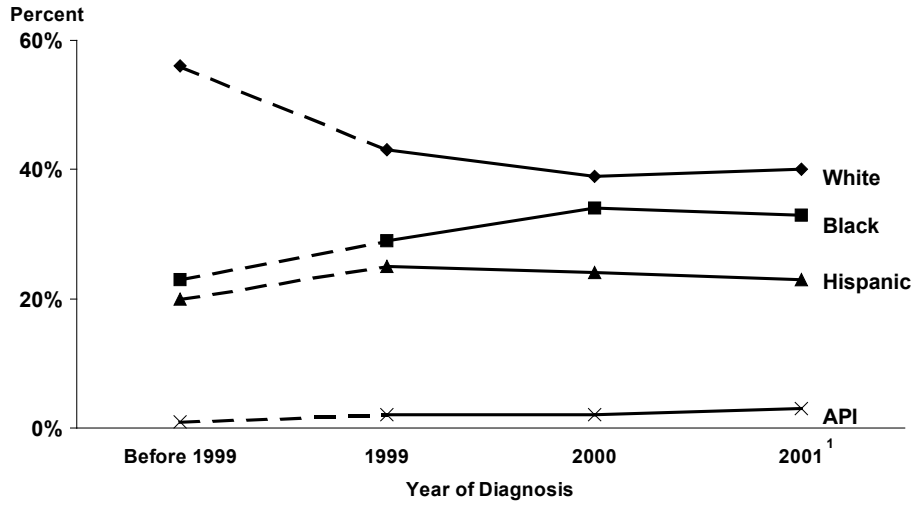
Table 2.2 People Diagnosed with HIV Infection by Race/Ethnicity and Year of Diagnosis: MA, Before 1999, 1999-2001

	White NH		Black NH		Hispanic		API		AI/AN		Total[1]
	N	%	N	%	N	%	N	%	N	%	
< 1999	11,103	56%	4,657	23%	4,044	20%	94	0.5%	25	0.1%	**19,977**
1999	543	43%	375	29%	321	25%	20	2%	4	0.3%	**1,277**
2000	416	39%	358	34%	252	24%	25	2%	2	0.2%	**1,059**
2001[2]	*340[2]*	*40%[2]*	*282[2]*	*33%[2]*	*198[2]*	*23%[2]*	*23[2]*	*3%[2]*	*2[2]*	*0.2%[2]*	***848[2]***

1 Totals include people with unspecified race/ethnicity
2 2001 HIV data are preliminary
NH = Non-Hispanic, API = Asian/Pacific Islander, AI/AN = American Indian/Alaskan Native
Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 7/1/02

- Compared to people diagnosed with HIV infection before 1999, people of color represent a larger proportion of reported cases among people diagnosed from 1999-2001.
- From 1999 – 2001, the proportions of Whites and Hispanics among HIV diagnoses decreased slightly (from 43% to 40% and 25% to 23%, respectively). (See Figure 2.2)

Figure 2.2 Percentage Distribution of People Diagnosed with HIV Infection by Race/Ethnicity and Year of Diagnosis: MA, 1999-*2001*[1]



Note: a dashed line is used to distinguish between pre-1999 data (which is an aggregate of multiple years) and annual data for subsequent years. 1 2001 HIV data are preliminary; Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/02

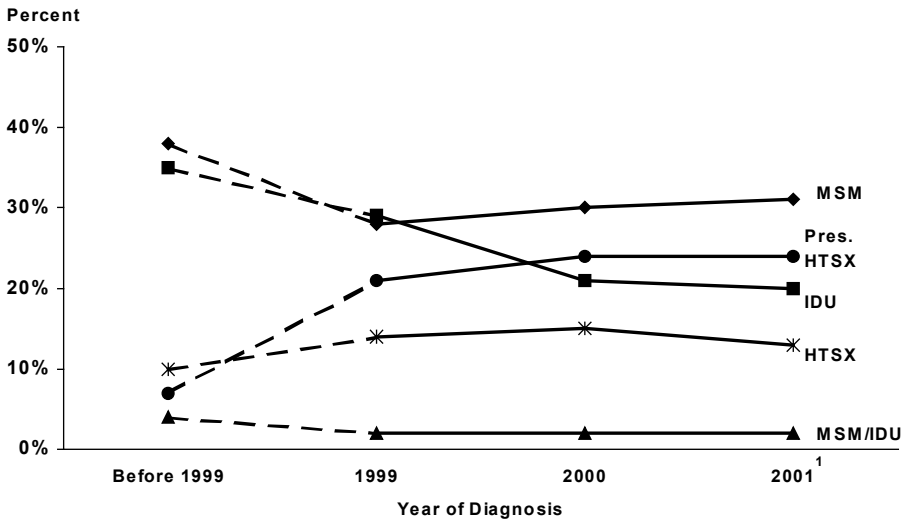
Table 2.3 People Diagnosed with HIV Infection by Exposure Mode[1] and Year of Diagnosis: MA, Before 1999, 1999- 2001

	MSM		IDU		MSM/ IDU		HTSX		Pres. HTSX		NIR		Total[2]
	N	%	N	%	N	%	N	%	N	%	N	%	
<1999	7,485	38%	7,006	35%	787	4%	1,991	10%	1,400	7%	692	3%	19,977
1999	351	28%	375	29%	25	2%	184	14%	273	21%	64	5%	1,277
2000	321	30%	220	21%	17	2%	162	15%	254	24%	78	7%	1,059
2001[3]	*259[3]*	*31%[3]*	*167[3]*	*20%[3]*	*15[3]*	*2%[3]*	*114[3]*	*13%[3]*	*206[3]*	*24%[3]*	*82[3]*	*10%[3]*	*848[3]*

1 See the Glossary for and explanation of Exposure Mode categories. MSM = male-to-male sex; IDU = injection drug use; MSM/IDU = male-to-male sex and injection drug use; HTSX = heterosexual sex; Pres. HTSX = presumed heterosexual; NIR = No Identified Risk
2 Totals include Blood/Blood Products, Occupational, or other exposure modes
3 2001 HIV data are preliminary
Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 7/1/02

- From 1999 to 2001, the proportion of HIV diagnoses with male-to-male sex as the reported exposure mode increased from 28% to 31%, while the proportion with injection drug use decreased from 29% to 20%.
- In 2000, the number of HIV diagnoses with presumed heterosexual as the exposure mode surpassed the number of diagnoses with injection drug use, and continues to in 2001. (Note: the category of presumed heterosexual is created to re-assign people who are reported with no identified risk but who are known to have denied all other risks except the possibility of heterosexual sex with a partner of unknown HIV status or risk. As such, it is still not clear what the exposure risk is for people in this category and any comparisons should be interpreted with caution.)

Figure 2.3 Percentage Distribution of People Diagnosed with HIV Infection by Exposure Mode and Year of Diagnosis: MA, 1999-*2001*[1]



Note: a dashed line is used to distinguish between pre-1999 data (which is an aggregate of multiple years) and annual data for subsequent years. 1 2001 HIV data are preliminary; Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/02

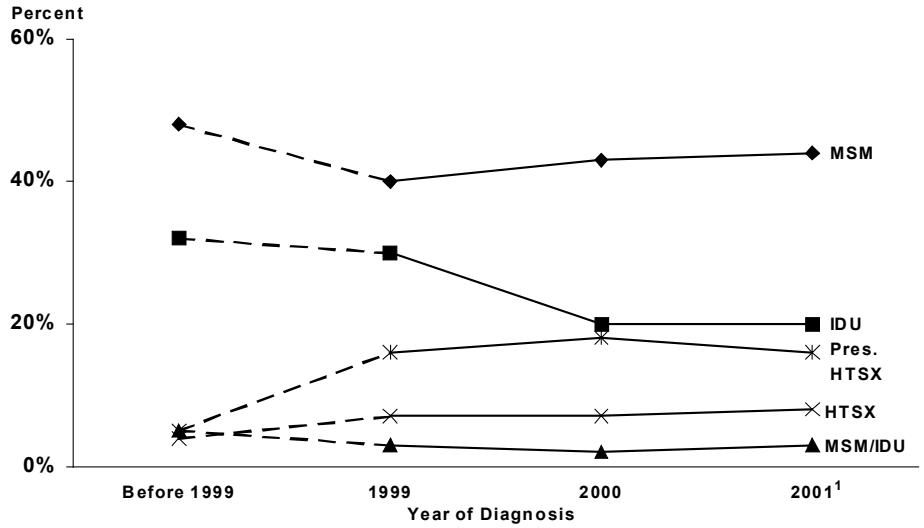
Table 2.4 *Males* Diagnosed with HIV Infection by Exposure Mode[1] and Year of Diagnosis: MA, Before 1999, 1999-2001

	MSM		IDU		MSM/ IDU		HTSX		Pres. HTSX		NIR		Total[2]
	N	%	N	%	N	%	N	%	N	%	N	%	
<1999	7,485	48%	4,939	32%	787	5%	558	4%	768	5%	544	4%	15,475
1999	351	40%	263	30%	25	3%	58	7%	144	16%	44	5%	888
2000	321	43%	151	20%	17	2%	53	7%	131	18%	65	9%	743
2001[3]	*259*[3]	*44%*[3]	*119*[3]	*20%*[3]	*15*[3]	*3%*[3]	*47*[3]	*8%*[3]	*95*[3]	*16%*[3]	*55*[3]	*9%*[3]	*592*[3]

1 See the Glossary for and explanation of Exposure Mode categories. MSM = male-to-male sex; IDU = injection drug use; MSM/IDU = male-to-male sex and injection drug use; HTSX = heterosexual sex; Pres. HTSX = presumed heterosexual; NIR = No Identified Risk
2 Totals include Blood/Blood Products, Occupational, or other exposure modes
3 2001 HIV data are preliminary
Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 7/1/02

- For males, male-to-male sex (MSM) accounts for the largest proportion of reported exposures before 1999 and from 1999 – 2001.
- In 2001, injection drug use (IDU) was reported for a smaller percentage (20%) of HIV diagnoses among males compared to earlier years. (See Figure 2.4)

Figure 2.4 Percentage Distribution of *Males* Diagnosed with HIV Infection by Exposure Mode and Year of Diagnosis: MA 1999-*2001*[1]



Note: a dashed line is used to distinguish between pre-1999 data (which is an aggregate of multiple years) and annual data for subsequent years. 1 2001 HIV data are preliminary; Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/02

Table 2.5 *Females* Diagnosed with HIV Infection by Exposure Mode[1] and Year of Diagnosis: MA, Before 1999, 1999-2001

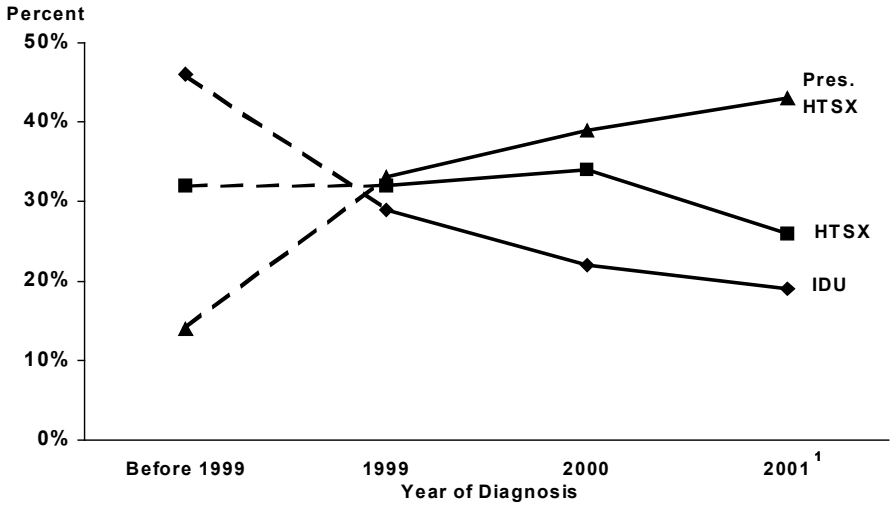
	IDU		HTSX		Pres. HTSX		Other		NIR		Total
	N	%	N	%	N	%	N	%	N	%	N
<1999	2,067	46%	1,433	32%	632	14%	222	5%	148	3%	4,502
1999	112	29%	126	32%	129	33%	2	0.5%	20	5%	389
2000	69	22%	109	34%	123	39%	2	0.6%	13	4%	316
2001[2]	*48*[2]	*19%*[2]	*67*[2]	*26%*[2]	*111*[2]	*43%*[2]	*3*[2]	*1%*[2]	*27*[2]	*11%*[2]	*256*[2]

1 See the Glossary for and explanation of Exposure Mode categories. IDU = injection drug use; HTSX = heterosexual sex; Pres. HTSX = presumed heterosexual; NIR = No Identified Risk
2 2001 HIV data are preliminary
Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 7/1/02

- From 1999 – 2001, the proportion of HIV diagnoses among women where the mode of exposure is presumed heterosexual sex increased from 33% to 43%.
- The percentage of HIV exposures among women reported with HIV infection attributed to injection drug use (19%) is less in 2001 than in prior years.

(Note: Caution should be used in interpreting dramatic increases or decreases from one year to the next. Reporting artifacts, such as underreporting of cases in certain risk categories, may account for these differences, particularly in more recent years.) (See Figure 2.5)

Figure 2.5 Percentage Distribution of *Females* Diagnosed with HIV Infection by Exposure Mode and Year of Diagnosis: MA 1999-*2001*[1]



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